REMARKS

This is intended as a full and complete response to the Office Action dated September 30, 2009, having a shortened statutory period for response set to expire on December 30, 2009. Claims 1, 2, 4, 6, 13 and 28 have been amended to more clearly recite various aspects of the invention. Support for these amendments may be found throughout the specification, including paragraphs [0008] and [0032]-[0036] and Figure 4. Applicants believe no new matter has been introduced by the amendments and the new claims presented herein. The amendments and the new claims have been made in a good faith effort to advance prosecution on the merits. Please reconsider the claims pending in the application for reasons discussed below.

In the Request for Continued Examination filed July 20, 2009, Applicants requested that the Examiner review the Request to Correct Inventorship Under Rule 48 filed April 15, 2008 and provide a decision regarding same. The Office Action dated September 30, 2009 did not provide a decision regarding this request. As such, Applicants respectfully requests that the Examiner review the Request to Correct Inventorship Under Rule 48 filed April 15, 2008 and provide a decision regarding same in the next office action.

Applicants would like to thank the Examiner for finding the arguments presented in the Request for Continued Examination filed July 20, 2009 persuasive and advancing the prosecution of the application.

Claim 6 stands rejected under 35 U.S.C. § 112 for lacking antecedent basis for "the line network." Claim 6 has been amended to now include, "further comprising at least one line network." Support for this amendment may be found throughout the specification including paragraph [0008]. Applicants believe that the rejection has been overcome. Withdrawal of the rejection is respectfully requested.

Claims 1-2, 4, 6 and 10 stand rejected under 35 U.S.C. 102(e) as being anticipated by US Publication No. 2004/0252585 ("Smith"). Claim 1 has been amended to now include "a first router coupled to a second router." Support for this amendment may be found throughout the specification, including paragraphs [0032]-[0035] and Figure 4. Applicants respectfully submit that these limitations are not taught by Smith.

Smith is generally directed at a high capacity digital geophone system capable of distributing seismic data over a computer network. (See Smith, Abstract). More specifically, Smith describes a system having a geophone, a hub, a network router and a network. (See Smith, paragraph [0014] and Figure 1). However, Smith does not teach "a first router coupled to a second router, a portion of the data source nodes and the data collection system, wherein the first router is configured to route the seismic data generated by the portion of the plurality of seismic data sources to the data collection system in accordance with the open network protocol," as newly recited in claim 1. In contrast, Smith teaches a system where the routers are merely coupled to the hub and the network but are not coupled to other routers.

Claim 4 has been amended to more clearly illustrate how the seismic data may be routed in the seismic acquisition system. Claim 4 now includes "wherein the first router routes the seismic data generated by the seismic data sources to the data collection system **through the** data source nodes and the **second router** in accordance with the open network protocol." Support for the amendment may be found throughout the specification, including paragraphs [0035]-[0036] and Figure 4. Smith is not capable of routing seismic data to the network via more than one router because none of Smith's routers are coupled to other routers. Therefore, Smith does not teach this limitation.

For the reasons listed above, claim 1 is patentable over Smith. Claims 2-10, 12-13, 15-17, 27 and 28 are also patentable over Smith since they depend from claim 1. Withdrawal of the rejection is respectfully requested.

Claims 3, 5 and 27 stand rejected under 35 USC 103(a) as being unpatentable over Smith in view of Eos. Trans. AGU Fall Meeting, 2001 ("Johnson"). Neither Smith nor Johnson, alone or in combination, teaches or discloses "a first router coupled to a second router," as recited in claim 1. Since claims 3, 5 and 27 depend from claim 1, and since neither Smith nor Johnson, alone or in combination, teaches, discloses or suggests all the limitations of claim 1, claims 3, 5 and 27 are therefore also patentable over Smith and Johnson. Withdrawal of the rejection is respectfully requested.

Claim 13 stands rejected under 35 USC 103(a) as being unpatentable over Smith in view of U.S. Patent No. 6,131,119 ("Fukui"). Neither Smith nor Fukui, alone or in

combination, teaches or discloses "a first router coupled to a second router," as recited in claim 1. Since claim 13 depends from claim 1, and since neither Smith nor Fukui, alone or in combination, teaches, discloses or suggests all the limitations of claim 1, claim 13 is therefore also patentable over Smith and Fukui. Withdrawal of the rejection is respectfully requested.

Claims 7-8 stand rejected under 35 USC 103(a) as being unpatentable over Smith in view of U.S. Patent No. 4,885,724 ("Read"). Neither Smith nor Read, alone or in combination, teaches or discloses "a first router coupled to a second router," as recited in claim 1. Since claims 7-8 depend from claim 1, and since neither Smith nor Read, alone or in combination, teaches, discloses or suggests all the limitations of claim 1, claims 7-8 are therefore also patentable over Smith and Read. Withdrawal of the rejection is respectfully requested.

Claims 28, 12, 15, 16 and 17 stand rejected under 35 USC 103(a) as being unpatentable over Smith in view of Fukui and further in view of Embedded Linux in a Soft Real-Time Task: The Canadian Geological Survey Internet Seismometer ("Arescon"). Neither Smith nor Fukui nor Arescon, alone or in combination, teaches or discloses "a first router coupled to a second router," as recited in claim 1. Since claims 28, 12, 15, 16 and 17 depend from claim 1, and since neither Smith nor Fukui nor Arescon, alone or in combination, teaches, discloses or suggests all the limitations of claim 1, claims 28, 12, 15, 16 and 17 are therefore also patentable over Smith, Fukui and Arescon. Withdrawal of the rejection is respectfully requested.

Claims 26 and 29 stand rejected under 35 USC 103(a) as being unpatentable over Smith in view of Eos. Trans. AGU Fall Meeting, 2001 ("Johnson"). The Examiner takes the position that Smith teaches "a first plurality of data source nodes, wherein each data source node is coupled to a portion of the first plurality of seismic data sources via a **first medium-bandwidth data path**, and wherein each data source node of the first plurality of data source nodes is assigned at least two network addresses; and a first router coupled to a portion of the first plurality of data source nodes via **the first medium-bandwidth data path** and to the first data collection system **via a high-bandwidth data path**, wherein the first router is configured to route the seismic data generated by the portion of the first plurality of seismic data sources to the first data

collection system in accordance with an open network protocol, and wherein the first router is assigned at least two network addresses." The relevant portions of Smith are reproduced below for the Examiner's convenience.

> Yet another significant improvement over traditional analog geophone systems is the increased capacity of a digital system versus an analog system. A digital geophone system can handle more geophones simply by sharing the bandwidth of a single network channel. The number of geophones that can be supported in an analog system is constrained by the number of channels on a sound card, typically 2, or inputs on a digital audio tape (DAT), typically 16 or an expensive, multi-channel system of several hundred sensor inputs. **A digital geophone system**, on the other hand, **is limited by the bandwidth of the network connection**. For example, if the desired signal is between 0 and 1 kHz bandwidth and is sampled at 16-bits per sample using a sampling frequency of 3 kHz, then each second of data would likely be 48 kbps plus a small overhead in bytes for the network packet information, say 50 kbps. Thus, **on an older 10 Mbps Ethernet local area network, 200 geophones could be supported**. On an easily available **100 Mbps Ethernet line, 2000 geophones could be supported**. On a **1 gigabit Ethernet network, 20,000 geophones could be supported**. Practical numbers of geophones will be slightly less than the theoretical numbers due to network traffic management. Note these are for a single local area network (LAN). Multiple LAN's can be connected to a wide area network (WAN) for even higher transmission rates.
> (Smith, paragraph [0010], Emphasis Added).

> FIG. 1 illustrates a network architecture diagram for the system of the present invention. A plurality of geophones 10 are physically distributed at seismic points of interest. The number of geophones 10 supported by the system of the present invention is constrained only by the bandwidth of the network connection used to funnel the data. Geophones can be grouped into subsystems 12. Each geophone 10 includes a network interface connection point for connecting to a hub 14 such as an Ethernet hub. Each hub 14 is coupled to a network router 16 that is part of a standard network 18. The architecture presented in FIG. 1 allows for any remote processing device 20 to access data from any geophone 10 over network 18. (Smith, paragraph [0014]).

> The most common implementation for connecting the geophones 10 to the network 18 will likely be a hardwired implementation in which cables attached to the geophones 10 are connected to a network access point hub 14 , router 16 or somewhere within the TCP/IP network 18 . However, wireless transmission of data from a geophone 10 to a network access point is an option as well. Wireless data transmission may be more

> suitable to geophones 10 that are situated in very remote areas or places where running cables is impractical. Since the data is digital, noise in the system can be more easily determined and accounted for than in analog systems regardless of whether a wired, wireless or other implementation is chosen. (Smith, paragraph [0022]).

As shown above, Smith does not teach "wherein each data source node is coupled to a portion of the first plurality of seismic data sources via a first medium-bandwidth data path" and "a first router coupled to a portion of the first plurality of data source nodes via the first medium-bandwidth data path and to the first data collection system via a high-bandwidth data path," as recited in claim 26. Applicants' claimed invention specifically employs **a medium-bandwidth data path between each data source node and the portion of the first plurality of seismic data sources** and **between the first router and the first plurality of data source nodes**. Applicants' claimed invention also specifically employs **a high-bandwidth data path between the first router and the first data collection system**. In contrast, Smith fails to indicate what type of bandwidth is used between its routers, hubs (i.e., data source nodes) and network (i.e., first data collection system), as recited in claim 26. Smith merely teaches using larger bandwidths to connect more geophones to its Ethernet network. As such, Smith only describes the bandwidth between its network and router. However, Smith fails to describe the bandwidth between its hubs (i.e., data source node), geophones (i.e., seismic data source) and its network (i.e., data collection system) as described in claim 26. Therefore, Smith fails to teach a **medium-bandwidth data path** and **a high-bandwidth data path**, as recited in claim 26.

For these reasons, claim 26 is patentable over Smith and Johnson. Withdrawal of the rejection is respectfully requested. Claim 29 is also patentable over Smith and Johnson since it depends from claim 26. Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed invention. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

The prior art made of record is noted. However, it is believed that the secondary references are no more pertinent to the Applicants' disclosure than the primary references cited in the office action. Therefore, it is believed that a detailed discussion of the secondary references is not deemed necessary for a full and complete response to this office action. Accordingly, allowance of the claims is respectfully requested.

Respectfully submitted,

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